Work Address
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Los Alamos National Laboratory
Los Alamos, NM 87545
505-665-4312

Home Address
1325 43rd St.
Los Alamos, NM 87544
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Objective: I would like to develop numerical models of physical systems and publish the results.

This resume is also available at `http://www-xdiv.lanl.gov/XTM/hall/resume/` in a more detailed form.

Education

- **Ph. D. in Nuclear Engineering, March 1988**   North Carolina State University, Raleigh, NC
  Thesis title: Numerical Modeling of the Transient Thermohydraulic Behavior of High Temperature Heat Pipes for Space Reactor Applications.
  GPA: 4.000/4.000. **Minor:** Mathematics. **Advisor:** Dr. J. Michael Doster

- **B. S. in Nuclear Engineering, May 1983**   North Carolina State University, Raleigh, NC
  GPA: 3.895/4.000. Graduated Summa Cum Laude in three years.

Areas of Knowledge

- Extensive experience in numerical methods, especially in the numerical solution of ordinary differential equations and coupled systems of partial differential equations.

- Extensive physical modeling experience, primarily in

  - radiation transport, radiation hydrodynamics, neutronics, diffusion and magnetohydrodynamics (spherical harmonics (P_N) and simplified spherical harmonics (SP_N) methods, discrete ordinates (S_N), Monte Carlo techniques), and
  - fluid dynamics (multi-phase, multi-component flow; surface tension modeling; heat and mass transfer; kinetic evaporation-condensation models; rarefied gas dynamics; melt front propagation models).

- Experience with regression (curve-fitting), root-finding, linear algebra (Conjugate Gradient and CG-like methods), optimization and other various numerical techniques.

- Extensive experience with modern computing systems, in particular with the Unix operating system (including system administration), various computer languages (Fortran, LaTeX and friends, scripting languages, Makefiles, elisp, awk, HTML, perl), and various architectures (Sun, Cray, SGI, HP, Thinking Machines, Vax).

Work Experience

4/88-Present Los Alamos National Laboratory - worked as a Technical Staff Member on various projects in the area of numerical modeling. Projects included:

- radiation transport (hydrodynamics) on unstructured meshes (the Augustus and Spartan packages);
- magnetohydrodynamics on unstructured meshes (the Magnum package);
- high-speed flow modeling with the PAGOSA code;
- neutronic modeling for the Accelerator Driven Assembly (ADA) project;
- code development (the Klaxon code) to model the thermohydraulic, high temperature, sonic gas flow of hydrogen in the Nuclear Thermal Rocket (NTR);
- transient thermohydraulic heat pipe modeling (the THROHPUT code);

- target/blanket design for the Accelerator Transmutation of Waste (ATW) project;
- development of the SIMMER-III code, which numerically models liquid metal fast breeder reactors (LMFBRs) during core disruptive accidents;
- modifications of a large production code (500,000 lines of FORTRAN) used for weapons design.

5/85-8/85 Los Alamos National Laboratory - worked with the Safety Code Development Group of the Energy Division (Q-9) as a practicum for my DOE fellowship.

Honors

- Graduated from the Engineering Honors Program, which included advanced classes and an individual project. My project was a numerical thermohydraulic model of a Pressurized Water Reactor during natural circulation.

- Elected Outstanding Senior in the Nuclear Engineering Department.

- Leader of the team of three students that won the 1983 American Nuclear Society Student Design Competition.

Fellowships & Scholarships

- Nuclear Engineering, Health Physics, and Radioactive Waste Management Fellowship from the Department of Energy, United States Government, administered by Oak Ridge Associated Universities (8/83-8/87).

- National Merit Scholarships (8/80-5/81 and 8/80-5/83).

- Institute of Nuclear Power Operations Scholarship (8/81-5/83).

- Bechtel Scholarship (8/82-5/83).

Affiliations

Professional and Honorary Societies

- Member of Sigma Xi ($\Sigma\Xi$), the Scientific Research Society (Associate Member: 4/89-11/90, Full Member: 11/90-Present).

- Member of the American Nuclear Society (Intermittent student member: 1980-1988, Full member: 1988-Present, editor of Topical Meeting Proceedings).

Honor Societies

- Member of Phi Kappa Phi (ΦKΦ), Honor Society (2/82-Present). *Membership requirement: place in the top 3% of the junior class.*

- Member of Tau Beta Pi (TBΠ), Engineering Honor Society (12/81-Present). *Membership requirement: place in the top 12.5% of the junior class while enrolled in an engineering curriculum.*

- Member of Pi Mu Epsilon (ΠME), Mathematics Honor Society (4/86-Present).

High IQ Societies

- Member of Mensa (3/86-Present). *Membership requirement: score in the top 2% (98th percentile) on any standard IQ test.*

- Member of Intertel (93). *Membership requirement: score in the top 1% (99th percentile) on any standard IQ test.*

- Member of the International Society for Philosophical Enquiry (ISPE) (1/96-Present). *Membership requirement: score in the top 0.1% (99.9th percentile) on any standard IQ test.*